



GO 1108

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reissue Application of:)	
David A. Russo, et al.)	Group Art Unit 1108
)	
Serial No. 08/544,212)	Examiner: Brunzman
)	
Filed: October 17, 1995)	
)	
For: COATING COMPOSITION)	
FOR GLASS)	Attorney Docket 1-13182

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June 27, 1996

Assistant Commissioner for Patents
Washington, D.C. 20231

Attention: Director, Group Art Unit 1108

PROTEST UNDER 37 C.F.R. §1.291(a)

Honorable Sir:

This is a Protest against the above identified reissue application. The Protest is based upon the following grounds:

- (1) The disclosure of the original patent is not enabling as required by 35 USC §112, first paragraph, for the new reissue claims.
- (2) Reissue would be improper under 35 USC §251 because no error occurred which rendered the patent wholly or partly invalid.

(3) The reissue claims are anticipated under 35 USC §102(b) or, in the alternative, obvious under 35 USC §103. A listing of the patents, publications or other information relied upon, as required by 37 CFR §1.291(b)(1), is provided on the Form PTO-1449 included herewith. A copy of each of the listed items, all of which are in English, is also included herewith in accordance with 37 CFR §§1.291(b)(3) and (4). A concise explanation of the relevance of each item listed appears below as required by 37 CFR §1.291(b)(2).

I. Non-Enablement of the New Reissue Claims

The scope of at least reissue claims 28-36, 38-42 and 44-49 exceeds the scope of the enabling disclosure of U.S. Patent No. 5,401,305 (the '305 patent). These reissue claims are not limited to compositions, films or articles which include a silicon oxide precursor in the coating composition or silicon oxide in the resulting film. Accordingly, there is clearly a discrepancy between the scope of these reissue claims and the scope of the disclosure of the '305 patent, in contravention of 35 USC §112, first paragraph. See *In re Steinhauer et al.*, 161 USPQ 595, 599 (CCPA 1969).

The '305 patent is enabling only for a coating composition for forming a mixed metal oxide/silicon oxide coating. The disclosed coating composition must include a metal oxide precursor, one of the recited silicon oxide precursors and an accelerant. The '305 patent lacks *any* disclosure which teaches or suggests a composition which does not include one of the recited precursors for silicon oxide, together with a metal oxide

precursor and at least one of the accelerants. Examples of the teachings of the '305 patent in this regard are as follows:

Abstract

A composition for coating glass by chemical-vapor deposition comprises a mixture of a tin oxide precursor monobutyltin trichloride, a silicon dioxide precursor tetraethylorthosilicate, and an accelerant such as triethyl phosphite...

Column 3, lines 16-24

To overcome the problems as discussed hereinabove, silica precursors are needed which are inexpensive, readily available, easy to handle, and have adequate deposition rates when vaporized with metal oxide precursors. Alkoxysilanes such as TEOS, a commodity chemical, would be desirable. However, prior to the present invention, it has not been possible to deposit silicon oxide films from TEOS by atmospheric-pressure CVD at commercially acceptable deposition rates...

Column 3, line 65 - column 4, line 2

From a review of the prior art, it cannot be determined what precursor combinations, if any, can be used for continuous deposition, under conditions and at a rate suitable for mass production, of mixed metal oxide/silicon oxide films at adequate rates from readily available and relatively inexpensive reagents.

Column 4, lines 18-31

The invention is made by CVD at rates greater than about 350 ANGSTROM /sec. at atmospheric pressure and at temperatures lower than 700 degree(s) C., by using a mixture which includes at least one precursor for a metal oxide, selected from the group consisting of volatile compounds of tin, germanium, titanium, aluminum, zirconium, zinc, indium, cadmium, hafnium, tungsten, vanadium, chromium, molybdenum, iridium, nickel and tantalum. The gaseous composition further includes a precursor for silicon dioxide, and one or more additives selected from the group consisting of phosphites, borates, water, alkyl phosphine, arsine and borane derivatives; PH sub 3, AsH sub 3 and B sub 2 H sub 6 ; and O sub 2, N sub 2 O, NF sub 3, NO sub 2 and CO sub 2. The additives are termed "accelerants" herein ...

Column 5, lines 49-54

The preferred embodiment of the present invention is a gaseous composition at a temperature below about 200 degree(s) C. at atmospheric pressure, adapted to

deposit a film of tin oxide and silicon oxide at a rate greater than about 350 ANGSTROM /sec. which comprises a precursor of tin oxide, a precursor of silicon oxide, an accelerant ...

Furthermore, every one of the examples 1-7 in the '305 patent illustrates a coating composition including, among other things, monobutyltin trichloride and tetraethyl orthosilicate, and the claims of the '305 patent all require a precursor of silicon oxide of the recited formula.

In view of the above, the disclosure of the '305 patent is enabling only for gaseous coating compositions including a precursor for a silicon oxide, or for films including a silicon oxide. The reissue claims 28, 29, 31-36, 38-42 and 44-47 are therefore based on an insufficient disclosure and should be rejected under 35 USC §112, first paragraph.

Moreover, while claim 30 limits the composition to one including a precursor of silicon oxide, such precursor is not further defined. In an Examiner's Action dated September 20, 1994 in the application Serial No. 08/104,125 (from which the '305 patent issued), the Examiner set forth a rejection based on 35 USC §112, first paragraph. The Examiner correctly determined that "the disclosure is enabling only for claims limited [to a] composition wherein the silicon oxide precursor is limited to that recited in [original] claim 11." The claims were amended as required by the Examiner, so that all of the claims which issued in the '305 patent include a limitation to the recited precursor for silicon oxide. Reissue claim 30 therefore should also be rejected under 35 USC §112, first paragraph.

II. Lack of "Error" in Accordance With 35 USC §251

The presentation of each of the new reissue claims is an impermissible attempt to recapture claims deliberately surrendered during prosecution of the applications on which the '305 patent is based. The failure to obtain such claims originally does not qualify as the type of "error" required to support reissue under 35 USC §251.

A. Legal Standards for "Error"

The Patent Act provides for the reissue of a patent which is, through "error", wholly or partly inoperative. 35 USC §251, first paragraph. One limitation on what constitutes "error" under 35 USC §251 is known as the recapture rule. The recapture rule "prevents the patentee from acquiring, through reissue, claims that are of the *same* or of *broader scope* than those claims that were cancelled from the original application." *Ball Corp. v. United States*, 221 USPQ 289,295 (Fed. Cir. 1984) (emphasis in original). The rule applies where "a patentee tries to recapture what he or she previously surrendered in order to obtain allowance of original patent claims." *Mentor Corp. v. Coloplast Inc.*, 27 USPQ 2d 1521, 1524 (Fed. Cir. 1993) (citation omitted). In such cases, the "deliberate withdrawal or amendment ... is not an error of the kind which will justify the granting of a reissue patent." *Id.*

In some instances, the reissue claims are broader in certain respects and narrower in others. The effect of the recapture rule may be avoided *if* the reissue claim is "broader in a way that does not attempt to reclaim what was surrendered earlier." *Mentor Corp., supra*

at 1525. Finding that the recapture rule applied, the court in *Mentor Corp* noted that the reissue claims were “broader in a manner directly pertinent to the subject matter surrendered during prosecution”, and that “the added limitations do not narrow the claims in any material respect compared with their broadening.” *Id.*

Similarly, it is not “error” under 35 USC §251 where the patentee acquiesces in an Examiner’s requirement for restriction. *In re Orita et al.*, 193 USPQ 145, 148 (CCPA 1977). Patentees are therefore estopped from obtaining by reissue claims which the patentee could not claim in the original patent because of a requirement for restriction in which the patentee acquiesced. *Id.*

B. The File History of the ‘305 Patent

The above-identified application is for the reissue of U.S. Patent No. 5,401,305, which issued on March 28, 1995. The ‘305 patent was based on a PCT national stage filing under 35 USC §371, PCT/US92/10873, which was a continuation in part of U.S. patent applications Serial No. 07/814,366 filed December 26, 1991 (the ‘366 application) and Serial No. 07/814,352 filed December 27, 1991 (the ‘352 application).

The ‘352 application was originally filed with claims 1-51. Claims 1-27 were directed to a method of depositing a film onto a substrate and claims 28-51 were directed to an article of manufacture. In an Examiner’s Action dated September 28, 1992, restriction was required under 35 USC §121 between the invention of claims 1-27 and that of claims 28-51. The applicants’ attorney had made a provisional election to prosecute the

invention of claims 1-27, and claims 28-51 were therefore withdrawn from further consideration. In addition, the claims 1-4, 11-12, 22-23 and 25 were rejected under 35 USC §102(b) as being anticipated by O'Dowd et al. (U.S. Patent No. 4,880,664); claim 5 was rejected under 35 USC §103 as being unpatentable over O'Dowd et al. in view of Gordon (U.S. Patent No. 4,308,316); and claims 1-27 were rejected under 35 USC §103 as being unpatentable over Gordon in view of Lagendijk (U.S. Patent No. 5,028,566). A Notice of Abandonment of the '352 application issued on May 13, 1993, based upon the applicants' failure to file a response to the Examiner's Action of September 28, 1992.

The '366 application was originally filed with claims 1-50. Claims 1-19 were directed to a composition for coating a substrate and claims 20-50 were directed to an article obtained by deposition onto a substrate of a coating from metal-oxide precursors. In an Examiner's Action dated September 29, 1992, restriction was required under 35 USC §121 between the invention of claims 1-19 and that of claims 20-50. The applicants' attorney had made a provisional election to prosecute the invention of claims 20-50, and claims 1-19 were therefore withdrawn from further consideration. In addition, the claims 20-22, 26-34, 37, 39, 40 and 44-50 were rejected under 35 USC §102(b) as being anticipated by Zaromb (U.S. Patent No. 3,378,396) or Gordon (U.S. Patent No. 4,187,336); and the claims 23-25, 35, 36, 38 and 41-42 were rejected under 35 USC §103 as being unpatentable over Zaromb or Gordon in view of Williams et al. or Hochberg et al. A Notice of Abandonment of the '366 application issued on May 26, 1993, based upon the applicants' failure to file a response to the Examiner's Action of September 29, 1992.

Rather than responding directly to the respective Examiner's Actions in the '352 and '366 applications, the applicants filed PCT application PCT/US92/10873, designating the U.S. as a continuation in part of the '352 and the '366 applications. Upon entry into the national phase in the U.S., this application was assigned Serial No. 08/104,125 (the '125 application). This application originally included claims 1-26, each directed to a "gaseous composition ... adapted to deposit at least a first layer of tin oxide and silicon oxide onto glass ..." In the initial Examiner's Action in the '125 application, dated September 20, 1994, all of the claims were indicated as being allowable if certain rejections under 35 USC §112, first and second paragraphs, were overcome.

The filing of the '125 application with all claims directed to a "gaseous composition" was a constructive election of those claims as against claims to a method of depositing a film onto a substrate, such as claims 1-27 of the '352 application, or to an article, such as claims 28-51 of the '352 application and claims 20-50 of the '366 application. The patentees' failure to obtain such method and article claims in the original patent was a deliberate response to the respective restriction requirements set forth in the parent applications, and is not an "error" of the type required by 35 USC §251. *In re Orita et al.*, 193 USPQ at 148.

Likewise, the claims presented in the '125 application were deliberately modified from the claims in the '352 and '366 applications responsive to the prior art rejections set forth in the Examiner's Actions set forth in those parent applications. Thus, the patentees are also prevented by the recapture rule from obtaining reissue claims of the same or

broader scope as the claims 1-27 of the '352 application and the claims 20-50 of the '366 application.

C. The Reissue Claims

The claims in the reissue application include new claims 28-49. Claims 28-32 are directed to a "gaseous composition", claims 33-38 are directed to "a film", and claims 39-49 are directed to "an article".

1. Reissue Claims 33-49

Independent reissue claim 33 defines simply a "film comprising one or more metal oxides and an accelerant." Dependent reissue claims 34-37 further define the metal oxide (claim 34), the accelerant (claims 35 and 36) and the inclusion of silicon oxide in the film (claim 37). Reissue claims 39-44 define an article comprising a substrate with the film of claims 33-38, respectively, deposited thereon. Reissue claims 45-46 further define the article of claim 39 wherein the substrate is glass (claim 45); the film has a refractive index which changes continuously (claim 46); the film comprises a plurality of layers (claim 47); each layer contains a mixture of tin and silicon oxides (claim 48); and each layer contains a concentration of tin oxide and silicon oxide different from an adjacent layer (claim 48).

As noted above, by filing the '125 application with claims directed only to a "gaseous composition", the patentees acquiesced to the restriction requirements set forth in both parent applications (the '352 and the '366 applications). Since it is not "error" under

35 USC §251 where the patentees acquiesce in an Examiner's requirement for restriction, the patentees are estopped from obtaining reissue claims, such as claims 33-49, directed to a "film" or "article". *In re Orita et al.*, 193 USPQ at 148.

2. Reissue Claims 28-32

Independent reissue claim 28 defines a "gaseous composition comprising at least one precursor of a metal oxide and an accelerant selected from the group consisting of organic phosphites, organic borates, and water." Independent reissue claim 31 defines a very similar gaseous composition, the only difference being the inclusion of additional members of the Markush group for the accelerant. Reissue claims 29 and 32 depend from claims 28 and 31 respectively, and further define the metal oxide precursor as being selected from a specific group of metal compounds. Reissue claim 30 further defines the invention of claim 28 as including a precursor for silicon dioxide.

Claim 20 of the '366 application defined "an article obtained by deposition onto a substrate of a coating from metal-oxide coating precursors, comprising at least one deposition-rate-enhancing substance." Claims 26 and 30 depended from claim 20 and further defined the deposition-rate enhancing substance as a phosphite (claim 26) or water (claim 30). As noted above, claims 20, 26 and 30 were all rejected as being anticipated by Zaromb (U.S. Patent No. 3,378,396) or Gordon (U.S. Patent No. 4,187,336). Claims 26 and 30 of the '366 application define an article obtained by deposition onto a substrate of a defined coating composition. Thus, while claims 26 and 30 of the '366 application recited

an "article" and reissue claim 28-23 define a "gaseous composition", these claims are essentially of the same scope.

Similarly, claim 1 of the '352 application defined a "method of depositing a film onto a substrate which comprises depositing at least one layer in the presence of a least one deposition-rate enhancing substance. Claim 8, depending from claim 1, further defined the method wherein "the layer comprises tin, silicon, and phosphorous oxides." The method of claim 8 of the '352 application thus defines a method of depositing a film from a composition including precursors for tin, silicon, and phosphorous oxides." Furthermore, this precursor composition is necessarily "gaseous"(see '305 patent, column 4, lines 34-37, "The mixture of precursors and additives is gaseous under the conditions of application required to produce the coated-glass article.")). As noted above, claim 8 was rejected under 35 USC §103 as being unpatentable over Gordon (U.S. Patent No. 4, 308,316) in view of Lagendijk (U.S. Patent No. 5,028,566). Both of the cited references were directed to gaseous compositions. Therefore, claims 28-32 are of substantially the same scope or broader than claim 8 of the '352 patent.

For these reasons, it is submitted that reissue claims 28 -32 are of substantially the same scope or of broader scope than claims previously deliberately abandoned by the applicants in the face of the prior art rejections set forth in the parent applications. As such, any failure to obtain claims of the scope of the reissue claims 28-32 was not the result of "error" under 35 USC §251, and their recapture would be improper.

III. Anticipation and/or Obviousness

The reissue claims are anticipated under 35 USC §102(b) by or, in the alternative, obvious under 35 USC §103 over each of the following patents. A copy of each patent is included herewith.¹

A. Reissue claims 28, 29, 31-35, 38-41 and 45 are anticipated under 35 USC §102(b) by each of the following: U.S. Patent No. 4,601,917 to Russo et al., U.S. Patent No. 3,949,146 to Kane et al., U.S. Patent No. 4,329,379 to Terneu et al, U.S. Patent No. 4,476,158 to Baumberger et al., U.S. Patent No. 4,590,096 to Lindner, U.S. Patent No. 4,696,837 to Lindner, and U.S. Patent No. 4,880,664 to O'Dowd.

U.S. Patent No. 4,601,917 to Russo et al. is directed to a coating composition for producing fluorine-doped tin oxide coatings by chemical vapor deposition. A coating composition including a reactive fluorine dopant compound and an organotin compound is initially provided as a liquid (see e.g., column 3, line 64 to column 4, line 6). A separate air stream may be directed through a humidifier 14 containing a suitable quantity of water

¹Copies of the noted patents and publications have been included by protestor to comply with 37 CFR §1.291(b)(3), even though protestor assumes that the reissue applicant (Elf Atochem North America, Inc.) will also provide copies of the same items to the Patent and Trademark Office, since Elf Atochem is aware of most if not all of these material items. Pursuant to litigation between Elf Atochem and Libbey-Owens-Ford Co. involving the U.S. Patent Nos. 4,590,096 and 4,696,837, Elf Atochem was made aware of U.S. Patent Nos. 3,949,146; 4,329,379 and 4,476,158, among others. U.S. Patent Nos. 4,187,336; 4,308,316; 4,880,664; 5,028,566; and 3,378,396, and the Hochberg et al. and Williams et al. articles were all cited during the prosecution of Elf Atochem's '352 and/or '366 applications. The '305 patent and U.S. Patent No. 4,601,917 have a common inventor in David A. Russo and, along with U.S. Patent Nos. 4,590,096 and 4,696,837, are believed to be commonly owned by Elf Atochem.

15 to provide a wet air stream at a desired relative humidity (column 3, lines 47-51). The air stream 17, either dry or wet, may be passed through an evaporator 18 for holding the liquid coating composition (column 3, lines 51-54). The vaporized liquid coating composition in the (wet) air stream 22 travels to a deposition chamber 23 in which a substrate is mounted (column 3, lines 58-61). Thus, a gaseous composition is formed prior to deposition which includes water vapor, a tin oxide precursor, a fluorine dopant compound, and oxygen (see column 5, lines 13-38).

U.S. Patent No. 3,949,146 to Kane et al. discloses a process for forming a mixed metal oxide coating on glass. A mixed reactant gas stream is utilized which includes an organotin compound, an antimony compound, and an oxygen-containing gas which is saturated with water (column 4, lines 33-54).

U.S. Patent No. 4,329,379 to Terneu et al. is directed to a chemical vapor deposition process for forming a tin oxide coating on a glass substrate. A gaseous medium containing tin tetrachloride and water vapor is brought into contact with the substrate in a coating zone (column 5, line 64 to column 6, line 13). This gaseous medium may also include a doping agent (column 6, lines 35-42) such as an antimony compound (column 9, lines 36-43).

U.S. Patent No. 4,476,158 to Baumberger et al. discloses a chemical vapor deposition method of applying a coating to a substrate. The reactive gases are supplied separately to a coating device which is designed to cause the gases to meet in counterflow. As a result, there is almost instantaneous mixing of the reagents (Abstract). The invention

is noted as being suitable for depositing oxides of tin, titanium, silicon, indium, zirconium, chromium, iron and nickel, *as well as mixtures thereof* (column 3, lines 4-9). In the illustrative embodiment, two reactive gas supply chambers 2 and 3 are provided for tin tetrachloride and water, respectively (column 3, lines 28-32). These reactants mix with one another in the mouth 6a of the nozzle and are almost instantaneously mixed (column 3, lines 59-64).

U.S. Patent No. 4,590,096 to Lindner is directed to a chemical vapor deposition process for forming fluorine-doped tin oxide coatings. A heated mixture of air, water vapor and a doped tin compound is supplied to the top of a vertical tube in which it drops down upon a heated piece of glass (column 5, lines 26-60). It is noted that the relative humidity of the air greatly influences the rate of deposition (column 6, lines 22-25).

U.S. Patent No. 4,696,837 to Lindner is also directed to a chemical vapor deposition process for forming fluorine-doped tin oxide coatings. A liquid coating composition containing an organotin compound and an organic fluorine compound is vaporized and introduced into a wet air stream (column 2, line 60 to column 3, line 6). The carrier gas is an oxygen-containing gas which contains water vapor (column 4, lines 46-51).

U.S. Patent No. 4,880,664 to O'Dowd is directed to a method of forming a layer of tin oxide on a vitreous substrate. The method comprises depositing a first film of tin oxide on the substrate by chemical vapor deposition from a first reactant mixture of tin chloride,

water and an alcohol, and depositing a second film of tin oxide by chemical vapor deposition from a second reactant mixture of tin chloride and water (Abstract).

B. Reissue Claims 37 and 43 are anticipated under 35 USC §102(b) by each of U.S. Patent No. 4,476,158 to Baumberger et al. (as discussed above) and U.S. Patent No. 3,378,396 to Zaromb.

U.S. Patent No. 3,378,396 to Zaromb teaches a mixed layer of silicon oxide and tin oxide. This layer is formed by directing separate sprays of a tin chloride solution and of a silicon chloride solution onto a heated glass substrate (Abstract). Each of the spray nozzles 14 and 16 is connected to a source of oxygen 28 adapted to supply an oxygen containing gas (column 2, lines 43-46). One example given by Zaromb for the tin chloride solution is a solution comprising antimony trichloride, water and hydrochloric acid (column 2, lines 51-54).

Alternatively, reissue claims 37 and 43 are unpatentable under 35 USC §103 over U.S. Patent No. 4,187,336 to Gordon or U.S. Patent No. 4,206,252 to Gordon in view of each of the patents discussed in section III-A above.

U.S. Patent No. 4,187,336 to Gordon (Gordon '336) discloses a continuously graded layer of mixed silicon-tin oxide built up during a continuous chemical vapor deposition process (column 6, lines 47-56 and Example 4). Similarly, U.S. Patent No. 4,206,252 to Gordon (Gordon '252) discloses a continuously graded layer of mixed silicon-tin oxide built up during a continuous chemical vapor deposition process using a

gas mixture containing a silicon compound, a tin compound and oxygen (column 6, lines 31-39). The deposition of the layer or layers of silicon oxide/tin oxide can be followed by the deposition of a layer of fluorine doped tin oxide (column 6, lines 60-64).

It would have been obvious to one of ordinary skill in the art to include water in the coating compositions of Gordon '336 or Gordon '252 as water is a known accelerant for the chemical vapor deposition of metal oxide films as illustrated by the patents discussed in section III-A.

C. Reissue claim 30 is anticipated under 35 USC §102(b) by the U.S. Patent No. 4,476,158 to Baumberger et al. as applied above.

In the alternative, reissue claim 30 is unpatentable under 35 USC §103 over Gordon '336 or Gordon '252 as applied in section III-B above in view of each of the patents discussed in section III-A. It would have been obvious to one of ordinary skill in the art to include water in the coating compositions of Gordon '336 or Gordon '252 as water is a known accelerant for the chemical vapor deposition of metal oxide films as illustrated by the patents discussed in section III-A.

D. Reissue claims 36 and 42 are unpatentable under 35 USC §103 over each of Zaromb, Gordon '336 or Gordon '252 in view of the Hochberg et al. article, the Williams et al. article, or U.S. Patent No. 5,028,566 to Lagendijk.

A.K. Hochberg and D.L. O'Meara, in *J. Electrochem. Soc.* 136(6) 1843 (1989), have reported enhanced deposition of silicon oxide films when trimethylphosphite was added to TEOS. While this was a low pressure CVD process, the reissue claims do not exclude such a process, and the gaseous reactant composition and the resulting articles are the same. Further, D.S. Williams and E.A. Dein, in *J. Electrochem. Soc.* 134(3) 657-64 (1987), have reported a low pressure CVD process for depositing coatings of phosphosilicate and borophosphosilicate glass films using a gaseous reactant mixture of tetraoxysilane, trimethylborate and/or trimethylphosphite, and oxygen. Again, the reissue claims do not exclude a low pressure process. Moreover, from the results in Table 1 of Williams et al., a simple conversion of that process from one at 0.3 Torr to one at atmospheric pressure would result in deposition rates on the order of those reported in the '305 patent.

U.S. Patent No. 5,028,566 to Lagendijk discloses the use of trimethylborate or trimethylphosphite with TEOS in the low pressure chemical vapor deposition of silicon oxide.

It would have been obvious to one of ordinary skill in the art to include phosphorus and boron compounds in the coating compositions of Zaromb, Gordon '336 or Gordon '252 as these compounds are known additives in coating compounds used for deposition of silicon oxide films, as shown by Hochberg et al., Williams et al. and Lagendijk.

E. Reissue claim 46 is unpatentable under 35 USC §103 over Gordon '336 or Gordon '252 as applied in section III-B in view of each of the patents discussed in section III-A.

As noted above, Gordon '336 and Gordon '252 disclose a continuously graded layer of mixed silicon-tin oxide built up during a continuous chemical vapor deposition process on a glass substrate (column 6, lines 31-39). It would have been obvious to one of ordinary skill in the art to include water in the coating composition of Gordon '336 as water is a known accelerant for the chemical vapor deposition of metal oxide films as illustrated by the patents discussed in section III-A.

F. Reissue claims 47-49 are unpatentable under 35 USC §103 over the U.S. Patent No. 4,386,117 to Gordon (Gordon '117) in view of each of the patents discussed in section III-A.

The Gordon '117 patent discloses a process for the chemical vapor deposition of coatings of silicon oxide/tin oxide mixtures (Abstract). Example 2 of Gordon '117 illustrates the deposition of first and second layers on a glass substrate, where both the first and second layers are formed of a mixture of silicon oxide and tin oxide, and the concentration of the silicon oxide and tin oxide in the first layer is different from that in the second layer (column 5, lines 4-37). It would have been obvious to one of ordinary skill in the art to include water in the coating composition of Gordon '117 as water is a known

accelerant for the chemical vapor deposition of metal oxide films as illustrated by the patents discussed in section III-A.

G. Reissue claims 1-27 (which remain unchanged from claims 1-27 of the '305 patent) are unpatentable under 35 USC §103 over Gordon '336 or Gordon '252 as applied in section III-B above in view of each of the patents discussed in section III-A or in view of Hochberg et al., Williams et al. and Lagendijk as discussed in section III-D, and in some cases further in view of Gordon '117 as discussed in III-F.

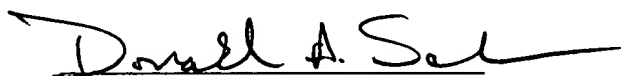
Gordon '336 and Gordon '252 disclose a continuously graded layer of mixed silicon-tin oxide built up during a continuous chemical vapor deposition process using a gas mixture containing a silicon compound, a tin compound and oxygen. The deposition of the layer or layers of silicon oxide/tin oxide can be followed by the deposition of a layer of fluorine doped tin oxide.

It would have been obvious to one of ordinary skill in the art to include water in the coating compositions of Gordon '336 or Gordon '252 as water is a known accelerant for the chemical vapor deposition of metal oxide films as illustrated by the patents discussed in section III-A. It would also have been obvious to one of ordinary skill in the art to include the claimed phosphorus and boron compounds in the coating compositions of Gordon '336 or Gordon '252 as these compounds are known additives in coating compounds used for deposition of silicon oxide films, as shown by Hochberg et al., Williams et al. and Lagendijk. Further in view of Gordon '117, it would have been obvious to apply first and

second mixed silicon oxide/tin oxide layers on a glass substrate, where the concentration of the silicon oxide and tin oxide in the first layer is different from that in the second layer.

IV. Conclusion

Each of the claims currently pending in this reissue application should be rejected for one or more of the reasons outlined above. Accordingly, an Examiner's Action to that effect is respectfully requested.




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CERTIFICATE OF SERVICE

It is hereby certified that a copy of this Protest under 37 C.F.R. 1.291(a) was mailed, first class, postage prepaid, to Luke A. Kilyk at Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., 1300 I Street, N.W., Washington, DC 20005, attorney for reissue applicant, this 27th day of June, 1996.



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